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ABSTRACT

The Reading Comprehension and Spelling subtests of the Stanford Achievement Test were administered to 170 eighth grade students to test four null hypotheses about the differences between reading ability, spelling ability, and phonic generalization spelling errors. In addition, a specially constructed Phonics Generalization Spelling Test was administered. The results indicate significant differences in the reading achievement of good and poor spellers, and in the spelling achievement of good and poor readers. A qualitative analysis of phonic generalization spelling errors also finds that qualitative differences occur in the errors made by good and poor readers and by good and poor spellers. (RL)

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PHONIC ERRORS ASSOCIATED WITH READING AND SPELLING ACHIEVEMENT IN THE EIGHTH GRADE

A THESIS

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TABLE OF CONTENTS

ACKNOWLEDGMENTS ii

LIST OF TABLES v

Chapter

I. INTRODUCTION 1

Hypotheses 2
Importance of the Study 2
Definition of Terms 3
Limitations of the Study 4

II. REVIEW OF THE LITERATURE 6

Reading and Spelling 6
Phonic Generalizations 8
Summary 12

III. PROCEDURE 14

Sample 14
Description of the Tests 15
Administration of the Tests 18

IV. FINDINGS AND DISCUSSION 19

Findings 19

V. SUMMARY AND CONCLUSIONS 25

Conclusions 25
Suggestions for Further Research 26

REFERENCES 27

Appendices

A. RAW SCORES OF GOOD AND POOR READERS AND GOOD AND POOR SPELLERS 30

Appendices

B. NUMBER OF PHONIC GENERALIZATION SPELLING ERRORS (EIGHTH GRADE) 33

C. CLYMER'S (1963) PHONIC GENERALIZATIONS . . . 36

D. PHONIC GENERALIZATION SPELLING TEST 40

LIST OF TABLES

1. Correlations Between Reading and Spelling According to Grade Level 13

2. Significance of the Differences Between Reading for Good and Poor Spellers and for Spelling of Good and Poor Readers on the Stanford Achievement Test (Eighth Grade) 20

3. Proportionate Amount of Phonic Generalization Spelling Errors Made by Poor Readers vs. Good Readers and by Poor Spellers vs. Good Spellers (Eighth Grade) 21

CHAPTER I

INTRODUCTION

The relationship between reading and spelling has been discussed in many studies. Horn (1967) described it as a significant relationship. The degree to which reading skills have an effect on spelling ability still remains questionable, although the two are undeniably related.

Many skills are common to the reading and spelling tasks. Betts (1945) mentioned some of these interrelationships. Both belong to the language learning area and they deal with spoken and written symbols. In addition, reading vocabulary experience is often a criterion for grade placement of spelling vocabulary. Auditory perception and visual perception of words are important to reading and spelling (Betts, 1945).

In the spelling task, phonic knowledge and skills are also used. The ability to use phonic skills will vary from child to child, depending upon their background in the area. Further complicating the spelling task is the notion that English spelling is not always regular. Horn (1957) stated that many

words have more than one pronunciation, that sounds can be spelled in many different ways, and that letters have different sounds.

Clymer's (1963) phonic generalizations list many common types of errors that can be made, thereby providing some means of classifying the types of errors a student might make.

Hypotheses

On the basis of this and other research, the hypotheses for this study are:

1. There will be no significant difference in the reading achievement of good and poor spellers.

2. There will be no significant difference in the spelling achievement of good and poor readers.

3. There will be no qualitative differences in the types of phonic generalization spelling errors made by good and poor readers.

4. There will be no qualitative differences in the types of phonic generalization spelling errors made by good and poor spellers.

Importance of the Study

Spelling ability must depend to some degree on reading and phonic skills a student possesses. Students use these skills in order to spell both familiar and unfamiliar words. Research supports

the idea that readers can improve their spelling through reading, even when their attention is not directed toward spelling (Gilbert, 1934b). However, the types of errors made by the ninth graders in Gilbert's study were not known.

Various studies have tested the usefulness of the phonic generalizations at different grade levels (Clymer, 1963). The utility of phonic generalizations as related to students' ability to spell correctly has been examined. Davis (1972) found that not all the generalizations had full applicability.

Coupled with the positive correlations between reading and spelling and their relation to phonics, this study hopes to obtain some pattern in the types of errors made by good and poor readers and by good and poor spellers. The amount of research involving reading and spelling is limited. In addition, research on Clymer's (1963) phonic generalizations has been limited. The association between reading and spelling, especially with regard to levels of achievement in phonics at the eighth-grade level, has not been carried out.

Definition of Terms

Reading ability is defined as the Reading Comprehension subtest score on the Stanford Achievement Test, Form B, 1972.

Good Readers score in the upper quartile of the Stanford Achievement Test.

Poor Readers score in the lower quartile of the Stanford Achievement Test.

Spelling ability is defined as the Spelling subtest score on the Stanford Achievement Test, Form B, 1972.

Good Spellers score in the upper quartile of the Stanford Achievement Test.

Poor Spellers score in the lower quartile of the Stanford Achievement Test.

Phonics generalization is defined as a rule explaining sound symbol relationships that occur in the English language (Bieri, 1977).

Phonics Generalization Spelling Test is a specific test developed by the investigator for this study, using Clymer's (1963) Phonics Generalizations.

Spelling errors are defined as errors not conforming to the phonic generalization samples selected for this study.

Limitations of the Study

The findings of this study will be limited by:

1. The size of the sample,

2. The size and variety of the spelling items on the Phonics Generalization Spelling Test,

3. The type of phonic generalizations used in this specific study.

CHAPTER II

REVIEW OF THE LITERATURE

This section has been divided into two main sections. The first section deals with reading and spelling, and the second highlights the literature on Clymer's (1963) phonic generalizations. Throughout, wherever possible, a developmental approach will be used, beginning with the earlier grades and progressing up the grades.

Reading and Spelling

Betts (1945) enumerated abilities common to both reading and spelling. He included intelligence, auditory perception, visual perception, and meaning vocabulary, while suggesting that reading and spelling abilities are correlational growths.

Differences in spelling abilities between good readers who were good spellers and good readers who were poor spellers were investigated by Plessas and Dison (1965). In a sample of 260 third graders, they found that there was no difference between good and poor spellers when the task was to identify correctly spelled words from nonsense words. However, good

spellers did better in tasks involving visual discrimination and spelling homonyms.

In a classic study, Russel (1946) investigated the relationships between spelling ability, reading ability, and meaning. His subjects were 135 pupils, grades three through five. They were given the Modern School Achievement Test, as well as a test constructed using Thorndike's 20,000 Words. The results were significant. Correlations between spelling and reading comprehension, reading speed, word recognition (context), word recognition (isolation), and word meaning were .66, .86, .86, and .80, respectively.

The relationship between ability in spelling and ability in reading was also sought by Peake (1941). This study focused on grades four through eight and used the results of the Stanford Achievement Test. The average correlation between spelling scores and word meaning scores for 355 pupils was .81. Peake concluded that there was a definite tendency for high scores in spelling to accompany high scores in word meaning. However, the coefficients of correlation were not uniform throughout the grades. Correlations ranged from a low of .43 in grade seven to a high of .93 in grade four.

A similar study by Townsend (1947) extended from grades three through twelve. The median correlation

between spelling and reading comprehension was .51 and between spelling and vocabulary was .63. This supports a substantial relationship between spelling and reading.

The reasons for good and poor spellers have been sought. Gilbert (1934b) wondered if spelling words were learned by students as they were encountered in their reading. The ninth-grade pupils used in this study improved their spelling through reading even when their attention was not directed toward the spelling. Good spellers were also found to be better able to improve their spelling through reading than are poor spellers. Gilbert had similar findings with college students (1943) and secondary students (1934a). In his study dealing with secondary students (1934a), he found that there is a definite growth in grade-to-grade spelling ability; and that the ability to pick up spelling through reading increases from grade to grade.

Phonic Generalizations

Clymer (1963) attempted to determine the generality of common phonics rules. More specifically, he sought to identify the phonic generalizations that were being taught in primary basal reading programs to determine the usefulness of these generalizations. After looking at four sets of primary basal readers,

Clymer selected 45 generalizations and tested them with 2,600 words. He established criteria that 20 words must apply to each generalization and that the percent of utility must be 75% of the cases examined. Only 18 of the generalizations were found to be useful, and some generalizations would be useful only after the pupil could pronounce the word. Clymer (1963) suggested that if some of the generalizations were reworded, they would be useful. He concluded that many of the generalizations taught are of limited value.

Perhaps the reason for these findings could be the "irregularity" of the English spelling. However, from the literature surveyed, this is not the case. A study by Hanna and Moore (1953) would refute such a statement. They attempted to ascertain which speech sounds are consistently represented by a specific letter or combination of letters. After breaking down 3,000 words into phonemes, they determined that 4/5 of the phonemes are spelled regularly; and that 3/4 of the vowel phonemes are spelled by regular letter representations.

Chomsky (1970) stated that there is a close relation of conventional English orthography and the sound structure of the language. This would be agreed upon by Venezky (1967) who stated: "A reading program

based on a complete understanding of English spelling-to-sound relationships stands a higher chance of being successful than one which is not" (p. 524).

After Clymer's (1963) study, many others have attempted to test the utility of the phonic generalizations at various grade levels. Bailey (1967) did a study for grades one through six. The 5,773 words used were taken from eight basal reading series. The conclusions held that certain generalizations should be reconsidered in instruction and certain others should be clarified (for example, 13 and 16). Bailey (1967) called for more research to test the value of the phonic generalizations in addition to wider word samples, regional pronunciations, and the schwa to be considered in future studies.

Emans (1967) repeated Clymer's (1963) study except the word sample was above the primary level. There was a difference between these studies in seven or eight of the generalizations. This suggests that if these generalizations were modified, it would increase the percent of utility.

Taking an overview of several studies on phonic generalizations, Burmeister (1968) found that many of the vowel rules (r controlled, digraphs, diphthongs) were found to be useful. Burmeister (1968) also suggested that the wording of the generalizations must

be clear and pointed out that the sources of the words in the study makes very little difference.

Bieri (1977) examined the utility of the phonic generalizations at the college level. Using 1,495 words from Feinstein's "Programmed College Vocabulary 3600," Clymer's criteria for usefulness were applied. Seven of the generalizations which were useful at the primary level were not useful at the college level. Bieri (1977) concluded that the phonic generalizations had a lower degree of utility when applied to a college level vocabulary sample, but it was pointed out that some generalizations had an insufficient number of words to be applied. The results may have been different had these generalizations had more words.

In response to the call for a new formula for determining the utility of phonic generalizations, Bukovec (1973) devised a formula that takes into account the number of conformations, exceptions, and incidents. Using a sample of 2,248 words, only 22 generalizations were useful under Clymer's (1963) criteria. When the Bukovec (1973) formula was applied, 42 to 44 generalizations were useful. These findings are encouraging, but more precise information about children's ability to arrive at word recognition is needed to see if these generalizations can be applied for that purpose.

The applicability of the generalizations to spelling programs has been examined by Davis (1972). Using Clymer's (1963) phonic generalizations and his criteria for determining the percent of utility, Davis (1972) chose six spelling programs which used phonetic approaches. After a sample of 5,431 words was tested, the findings were quite similar to those of other studies. Only 26 had the desired degree of utility.

Summary

The research supports a close relationship between reading and spelling. Table 1 summarizes the particular studies correlating spelling and reading for grades one through college. An examination of Table 1 together with the studies reviewed reveal a median correlation between reading and spelling of .59, with a range from .21 to .85.

The literature has established the relationship between spelling and reading as well as providing a background on the phonic generalizations. Hence, there may be value in examining the types of phonic generalization spelling errors of good and poor spellers and readers.

TABLE 1

CORRELATIONS BETWEEN READING AND SPELLING ACCORDING TO GRADE LEVEL

Study	Grade	Correlation
Monroe (1932)	1-5	.81
Monroe (1932)	1-8	.85
Monroe (1932)	2-8	.85
Spache (1941)	2	.58
Russell (1943)	2	.80
Spache (1941)	3-4	.59
Russell (1937)	3-5	.80
Russell (1946)	3-5	.84
Gates & LaSalle (1923)	3-6	.83
Acomb (1936)	3-6	.83
Terman (1925)	3-8	.46-.57
Townsend (1947)	3-12	.51
Sr. Mary of the Visitation (1929)	4	.68
	5	.59
Spache (1941)	4-5	.21
Spache (1941)	4-6	.67
Peake (1941)	4-8	.81
Spache (1941)	6-7	.36
Spache (1941)	6-8	.41
Gates (1922)	7-8	.48
Hartmann (1931)	College	.47

CHAPTER III

PROCEDURE

In order to test for spelling ability and reading comprehension ability, the Stanford Achievement Test, Advanced Battery, Form B (1972) was used. The subtests provided a frame of reference for dividing the students into groups. For purposes of testing the types of phonic generalization spelling errors, a test was constructed.

Sample

The subjects for this study were 170 eighth-grade pupils at Monroe Township High School, Jamesburg, New Jersey.

Monroe Township is located at the southern end of Middlesex County. It comprises 43 square miles which are mostly rural in nature. The community has three major population components: a large retirement population, a number of city transplants who are located in new development housing, and the farmers who have lived in the area for generations. The population is 12,000 and is steadily growing. The income is average, from $10,000 to $12,000.

Description of the Tests

Two instruments were used in this study: the Stanford Achievement Test, Advanced Battery, Form B (1972) and the Phonic Generalization Spelling Test.

The Reading Comprehension subtest of the SAT was 74 items with passages of increasing difficulty. Students were timed and asked to mark the best answer to questions on the paragraphs they had read.

The Spelling subtest of the SAT has 60 items. The first 10 items, Part A, require students to examine words in context and to chose the word that is incorrectly spelled. In Part B, which is 50 items, students indicate the misspelled word; but the words were presented in isolation.

Norms for the Stanford Achievement Test, Advanced Battery, were developed after administering the tests to 61,000 pupils in 1,445 classrooms in 47 school systems throughout the country, tested in the fall of 1970. The schools were chosen because they fit the specifications of city size, geographic location, median family income, median years of schooling, and school enrollment. The standardization of the test was completed in 1972 after testing 109 school systems from 43 states, involving 275,000 pupils. The distribution of pupils was established so that the norm samples would duplicate the characteristics for

pupils in average daily attendance throughout the country.

The split-half reliability for the reading comprehension subtest was .95 and for the spelling subtest was .95. The reliability based on the Kuder-Richardson Formula 20 was .94 for the Reading Comprehension and .94 for the Spelling. The intercorrelation between the Reading Comprehension and Spelling subtests was .73.

The validity of the Stanford Achievement Test was good. Content validity, that is the extent to which the test represented a sample of skills corresponding to the goals of our school system, was determined to be good by the township's test evaluators. Concurrent validity of the test was also evaluated. Test characteristics such as correlations with prior editions of the Stanford Achievement Test and other achievement tests, low correlations with variables known to have little or no relationship to achievement in particular areas were suitable.

The second instrument used in this study was the Phonic Generalization Spelling Test which was devised by this investigator. The purpose of this test was to determine the types of spelling errors made by good and poor readers and spellers, using the phonic generalizations as the criteria for errors.

A decision was made to test one word for each generalization. Subjects were asked to spell 45 words. The words were chosen from a variety of eighth-grade materials. The primary source was Frackenpohl, Taylor, McDonald, and Joline's (1962) Word Clues H list. Other sources included SRA vocabulary from kits IIIb and IVa, Controlled Reading HA vocabulary, and the eiththh-grade spelling textbook (Kottmeyer, 1976).

Words that the subjects were already exposed to were excluded from the study. In the interest of insuring that the spelling errors would fit the generalization, it was necessary to limit the length of the words. For this reason, the words were almost exclusively limited to one- or two-syllable words, unless the generalization stated differently.

For purposes of testing, the words were presented in context. The examiner said each word, used it in a sentence, and repeated it. Subjects wrote the words on the paper provided.

To insure the reliability of the Phonics Generalization Spelling Test, the test was given to the subjects two weeks apart. The reliability of the two forms was .93.

Content validity of the test appeared to be appropriate. It measured the phonic generalization spelling errors, and the generalizations were strictly

adhered to in the construction of this instrument.

Administration of the Tests

The Stanford Achievement Test, Advanced Battery, Form B was administered to the entire eighth grade on March 20, 21, 22, 1978. All the subtests were given except the Science and Social Studies. Each question was multiple choice, and the students marked their answers on seperate machine-scored answer sheets. Examination procedures were followed as set down in the Examiner's Manual.

The Phonic Generalization Spelling Test was administered in the Reading classes on April 17 and 18, 1978. The second testing was on May 1 and 2, 1978. A sentence containing the word to be spelled was read, with the word being repeated at the beginning and at the end of the sentence. The test took approximately 15 minutes.

CHAPTER IV

FINDINGS AND DISCUSSION

The purpose of the following discussion is to present the findings revealed by the tests and procedures and to interpret the data.

Findings

The mean spelling and reading scores of the four groups on the Stanford Achievement Test Reading and Spelling subtests is presented in Table 2. An examination of Table 2 reveals that the Reading Achievement of Good and Poor Spellers is statistically significant beyond the .001 level; and, similarly, the Spelling Achievement of Good and Poor Readers is also significant beyond the .001 level.

Table 3 summarizes the proportion of the Phonic Generalization Spelling Errors made by Poor Readers in relation to Good Readers and by Poor Spellers in relation to Good Spellers. The average proportion of Phonic Generalization Spelling Errors of Poor Readers and Poor Spellers was 3.0 and 2.3, respectively. In other words, Poor Readers made 3.0 times as many errors as Good Readers; and the Poor Spellers made

TABLE 2

SIGNIFICANCE OF THE DIFFERENCES BETWEEN READING FOR GOOD AND POOR SPELLERS AND FOR SPELLING OF GOOD AND POOR READERS ON THE STANFORD ACHIEVEMENT TEST (EIGHTH GRADE)

	M	SD	t
Reading Achievement			
Good Spellers (N=36)	55.5	8.7	
Poor Spellers (N=36)	33.0	9.9	9.8*
Spelling Achievement			
Good Readers (N=36)	48.2	8.6	
Poor Readers (N=36)	25.7	11.8	9.0*

*Significant at the > .001 level of confidence.

TABLE 3

PROPORTIONATE AMOUNT OF PHONIC GENERALIZATION SPELLING ERRORS MADE BY POOR READERS VS. GOOD READERS AND BY POOR SPELLERS VS. GOOD SPELLERS (EIGHTH GRADE)

Generalization	Poor Readers (Proportion)	Poor Spellers (Proportion)
1	1.4	2.0
2	2.9	2.7
3	0.0	0.0
4	1.3	0.0
5	1.8	1.5
6	1.9	2.8
7	1.6	2.1
8	3.6	2.7
9	2.0	2.0
10	0.0	6.0
11	1.9	3.1
12	0.0	1.2
13	7.5	18.0
14	0.0	2.0
15	1.3	2.0
16	6.0	16.0
17	2.6	5.3
18	1.8	2.4
19	8.5	21.0
20	1.4	2.6
21	3.7	15.0

TABLE 3--Continued

Generalization	Poor Readers (Proportion)	Poor Spellers (Proportion)
22	1.5	2.0
23	2.1	3.2
24	2.8	3.0
25	5.3	5.6
26	1.7	2.5
27	3.4	4.8
28	6.0	7.0
29	6.0	5.0
30	7.5	16.0
31	3.1	14.0
32	2.8	2.9
33	2.8	3.1
34	2.4	2.1
35	6.5	15.0
36	11.0	15.0
37	2.0	2.8
38	2.3	3.1
39	3.0	15.0
40	2.0	3.2
41	1.5	3.7
42	2.2	3.4
43	0.0	2.0
44	6.0	5.0

TABLE 3--Continued

Generalization	Poor Readers (Proportion)	Poor Spellers (Proportion)
45	2.1	2.1
Mean Proportion	2.3	3.0

Note. Appendix B presents the original number of Spelling Errors.

2.3 times as many errors as the Good Spellers. The range of errors for the Poor Readers is from 1.3 to 11.0, and the errors for the Poor Spellers range from 1.2 to 21.0.

A closer examination of Table 3 reveals that the top five Generalizations for Poor Readers, in terms with their proportionate differences to Good Readers, are 3, 10, 12, 14, 43. The top five for the Poor Spellers group are 3, 4, 5, 12 (and possibly 1, 9, 14, 15, 22, 43 which all had the same number of occurrences). In examining the bottom five generalizations for the Poor Readers, which are 13, 19, 30, 35, 36; and for the Poor Spellers, which are 13, 16, 19, 30, 39, it becomes apparent that there are no major overlaps. These two groups, although they do share some errors in common, basically make different types of mistakes.

CHAPTER V

SUMMARY AND CONCLUSIONS

Four hypotheses were developed. The first two were addressed to quantitative differences between the reading and spelling achievement of Good and Poor Readers and Spellers. In both instances, it was found that statistically significant differences existed between the groups.

The second two hypotheses were devoted to qualitative differences with respect to the degree and type of Phonic Generalization Spelling Errors made. In both instances, the proportionate number of errors was 2.3 times as great for Poor Readers as opposed to Good Readers and 3.0 times as great for Poor Spellers as opposed to Good Spellers. There was no appreciable overlap in the types of errors made by the groups.

Conclusions

On the basis of four hypotheses which were substantiated, there were qualitative and quantitative differences in the spelling achievement of Good and Poor Readers and in the reading achievement of Good

and Poor Spellers.

Suggestions for Further Research

Some possibilities for further research suggested by this study are:

1. The continuation of the study into the types of spelling errors made by the same types of students at different grade levels to see if qualitative and quantitative differences exist there.

2. Additional evaluation of Phonic Generalization approaches and how generalizable these approaches are for different types and levels of students.

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APPENDIX A

RAW SCORES OF GOOD AND POOR READERS AND GOOD AND POOR SPELLERS

READING AND SPELLING SCORES OF GOOD READERS AND POOR READERS ON THE STANFORD ACHIEVEMENT TEST (EIGHTH GRADE)

Good Readers (N=36)			Poor Readers (N=36)		
Subject	Reading	Spelling	Subject	Reading	Spelling
1	70	51	1	35	27
2	68	59	2	34	29
3	68	59	3	33	43
4	68	58	4	33	42
5	65	55	5	33	41
6	65	51	6	33	16
7	65	51	7	32	42
8	64	57	8	32	24
9	63	51	9	32	10
10	63	47	10	31	25
11	62	51	11	30	46
12	61	54	12	30	39
13	61	52	13	30	34
14	61	49	14	30	33
15	61	46	15	30	26
16	60	55	16	30	26
17	60	55	17	30	20
18	59	54	18	30	19
19	59	52	19	30	16
20	59	43	20	29	21
21	59	39	21	29	17
22	58	47	22	28	32
23	58	45	23	28	18
24	56	53	24	27	37
25	56	52	25	27	19
26	55	52	26	26	15
27	55	48	27	24	24
28	55	30	28	24	21
29	54	52	29	24	17
30	54	45	30	22	14
31	54	49	31	21	35
32	54	46	32	20	14
33	54	40	33	17	29
34	54	36	34	16	34
35	54	34	35	15	16
36	54	17	36	15	5

SPELLING AND READING SCORES OF GOOD SPELLERS AND POOR SPELLERS ON THE STANFORD ACHIEVEMENT TEST (EIGHTH GRADE)

Good Spellers (N=36)			Poor Spellers (N=36)		
Subject	Spelling	Reading	Subject	Spelling	Reading
1	59	68	1	27	35
2	59	52	2	26	30
3	58	68	3	26	30
4	58	53	4	25	47
5	57	68	5	25	41
6	57	64	6	25	38
7	57	51	7	25	31
8	57	50	8	24	53
9	56	36	9	24	32
10	55	65	10	24	24
11	55	60	11	23	46
12	55	60	12	23	40
13	54	59	13	23	37
14	53	56	14	23	36
15	53	56	15	22	51
16	52	59	16	21	29
17	52	56	17	21	24
18	52	55	18	20	44
19	52	53	19	20	30
20	52	52	20	19	30
21	51	70	21	19	27
22	51	65	22	18	47
23	51	65	23	18	28
24	51	63	24	17	54
25	51	62	25	17	29
26	51	46	26	17	24
27	51	39	27	16	33
28	50	48	28	16	30
29	50	41	29	16	23
30	49	61	30	16	15
31	49	53	31	15	35
32	49	51	32	15	26
33	49	50	33	14	22
34	49	50	34	14	20
35	48	55	35	10	32
36	48	39	36	5	15

APPENDIX B

NUMBER OF PHONIC GENERALIZATION SPELLING ERRORS

(EIGHTH GRADE)

NUMBER OF PHONIC GENERALIZATION SPELLING ERRORS
(EIGHTH GRADE)

Generalization	Good Readers	Poor Readers	Good Spellers	Poor Spellers
1	16	23	11	22
2	9	26	10	27
3	0	0	1	0
4	11	14	10	11
5	10	18	10	15
6	16	30	12	33
7	20	32	15	32
8	5	18	6	16
9	7	14	6	12
10	3	4	0	6
11	8	15	7	22
12	21	23	23	27
13	2	15	0	18
14	9	9	6	12
15	17	22	11	22
16	2	12	0	16
17	5	13	3	16
18	16	28	12	29
19	2	17	0	21
20	16	23	10	26
21	3	11	1	15
22	22	34	17	34
23	15	32	11	35
24	9	25	9	27
25	4	21	5	28
26	20	33	14	35
27	7	24	6	29
28	2	12	2	14

Generalization	Good Readers	Poor Readers	Good Spellers	Poor Spellers
29	1	6	1	5
30	2	15	1	16
31	7	22	2	28
32	8	22	9	26
33	8	22	8	25
34	9	22	10	21
35	2	13	0	15
36	1	11	0	15
37	12	24	9	25
38	8	18	7	22
39	4	12	0	15
40	14	28	9	29
41	11	17	6	22
42	11	24	7	24
43	1	0	0	2
44	2	12	3	15
45	14	29	14	29
Total	372	845	304	934

APPENDIX C

CLYMER'S (1963) PHONIC GENERALIZATIONS

CLYMER'S (1963) PHONIC GENERALIZATIONS

1. When there are two vowels side by side, the long sound of the first vowel is heard, and the second vowel is usually silent.

2. When a vowel is in the middle of a one-syllable word, the vowel is short.
   - Middle letter
   - One of the middle two letters in a word of four letters
   - One vowel within a word of more than four letters

3. If the only vowel letter is at the end of a word, the letter usually stands for a long sound.

4. When there are two vowels, one of which is final e, the first vowel is long and the e is silent.

5. The r gives the preceding vowel a sound that is neither long nor short.

6. The first vowel is usually long and the second silent in the digraphs ai, ea, oa, and ui.
   - ai
   - ea
   - oa
   - ui

7. In the phonogram ie, the i is silent, and the e has a long sound.

8. Words having double e usually have the long e sound.

9. When words end with silent e, the preceding a or i is long.

10. In ay, the y is silent and gives a its long sound.

11. When the letter i is followed by the letters gh, the i usually stands for its long sound, and the gh is silent.

12. When a follows w in a word, it usually has the sound a as in was.

13. When e is followed by w, the vowel sound is the same as represented by oo.

14. The two letters ow make the long o sound.

15. W is sometimes a vowel and follows the vowel digraph rule.

16. When y is the final letter in a word, it usually has a vowel sound.

17. When y is used as a vowel in words, it sometimes has the sound of long i.

18. The letter a has the same sound (ô) when followed by l, w, and u.

19. When a is followed by r and final e, we expect to hear the sound heard in care.

20. When c and h are next to each other, they make only one sound.

21. Ch is usually pronounced as it is in kitchen, catch, and chair, not like sh.

22. When c is followed by e or i, the sound of s is likely to be heard.

23. When the letter c is followed by o or a, the sound of k is likely to be heard.

24. The letter g often has a sound similar to that of j in jump when it precedes the letter i or e.

25. When ght is seen in a word, gh is silent.

26. When a word begins kn, the k is silent.

27. When a word begins with wr, the w is silent.

28. When two of the same consonants are side by side, only one is heard.

29. When a word ends in ck, it has the same last sound as in look.

30. In most two-syllable words, the first syllable is accented.

31. If a, in, re, ex, de, or be is the first syllable in a word, it is usually unaccented.

32. In most two-syllable words that end in a consonant followed by y, the first syllable is accented and the last is unaccented.

33. One vowel letter in an accented syllable has its short sound.

34. When y or ey is seen in the last syllable that is not accented, the long sound of e is heard.

35. When ture is the final syllable in a word, it is unaccented.

36. When tion is the final syllable in a word, it is unaccented.

37. In many two- and three-syllable words, the final e lengthens the vowel in the last syllable.

38. If the first vowel sound in a word is followed by two consonants, the first syllable usually ends with the first of the two consonants.

39. If the first vowel sound in a word is followed by a single consonant, that consonant usually begins the second syllable.

40. If the last syllable of a word ends in le, the consonant preceding the le usually begins the last syllable.

41. When the first vowel element in a word is followed by th, ch, or sh, these symbols are not broken when the word is divided into syllables and may go with either the first or second syllable.

42. In a word of more than one syllable, the letter v usually goes with the preceding vowel to form a syllable.

43. When a word has only one vowel letter, the vowel sound is likely to be short.

44. When there is one e in a word that ends in a consonant, the e usually has a short sound.

45. When the last syllable is the sound r, it is unaccented.

APPENDIX D

PHONIC GENERALIZATION SPELLING TEST

PHONIC GENERALIZATION SPELLING TEST

Directions: The examiner will say the word, use it in the sentence, and repeat the word again.

1.	hue	The hue of red was very striking.
2.	lull	There was a lull in the conversation.
3.	she	She said to get out.
4.	clone	In the future, the clone may be a reality.
5.	swerve	We had to swerve to avoid the car.
6.	conceal	Did you conceal the gift?
7.	pier	The boat docked at the pier.
8.	heed	They did not heed the warning.
9.	bade	The voice bade me to come in.
10.	betray	Never betray a friend.
11.	blight	The crops were hit by a blight.
12.	wan	The child was wan and sickly.
13.	brew	Please brew me some tea.
14.	stow	Would you like to stow away on a boat?
15.	sow	The farmer had to sow the seeds by hand.
16.	envy	How I envy you!
17.	ply	The old ship used to ply these waters.
18.	awl	The carpenter used an awl to make a hole.
19.	glare	Why did you glare at me?
20.	lurch	The train made a sudden lurch.
21.	clench	The class will clench their teeth when the chalk squeaks.

22.	cease	Cease doing that job, please.
23.	carcass	The carcass of the wolf was rotten.
24.	gesture	The teacher made a gesture toward the clock.
25.	plight	The plight of our ecology is serious.
26.	knack	They seem to have the knack for fishing.
27.	wren	The wren was eating from the feeder.
28.	muffle	A silencer will muffle the gun shot.
29.	wick	The wick on the lantern was wide.
30.	rustic	What a rustic view!
31.	extinct	The mannoth is extinct.
32.	calamity	My cake turned out to be a real calamity.
33.	livid	The fighter was livid with anger.
34.	sultry	Sunday was a very sultry day.
35.	lecture	Father gave us a lecture.
36.	vibration	The vibration of the plane shook the passengers up.
37.	brigade	The soldiars belonged to the twelfth brigade.
38.	petty	That quarrel was very petty.
39.	elude	The gang managed to elude the police.
40.	obstacle	Superstars must run an obstacle course.
41.	fathom	One fathom is not very deep.
42.	hover	The helicopter will hover over the fields.
43.	pest	You are a pest.
44.	budget	We're on a tight budget.
45.	stutter	The child had a slight stutter.